

Cubic and Reciprocal Graphs

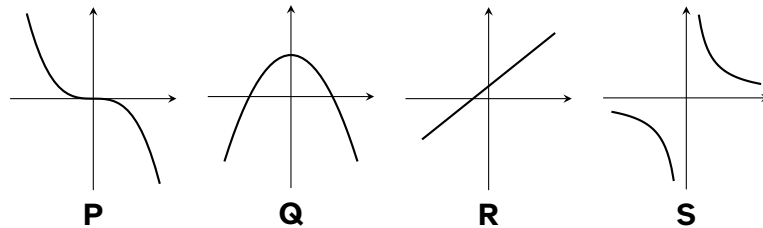
For Pearson Edexcel GCSE Mathematics (1MA1) • Foundation tier

Name _____

Total marks: **21**

Answer **all** questions in the spaces provided. Show your working: marks are given for correct method.

1 Here are four graphs.



Match each equation to its graph.

$y = -x^3$ $y = \frac{1}{x}$ $y = 1 - x^2$

(3)

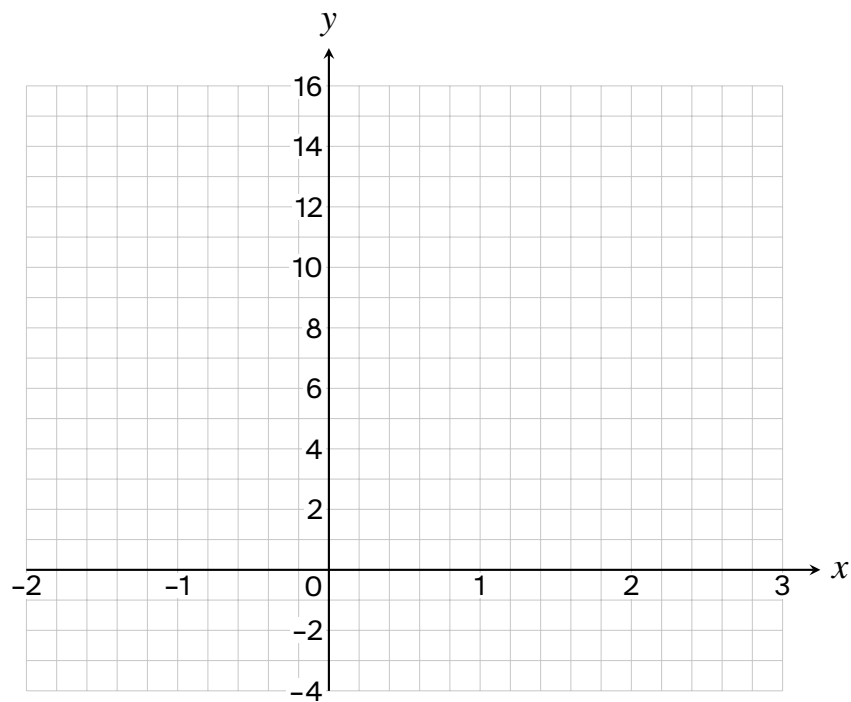
(Total for Question 1 is 3 marks)

- 2 (a) Complete the table of values for $y = x^3 - 4x$

x	-2	-1	0	1	2	3
y	0		0		0	

(2)

- (b) On the grid, draw the graph of $y = x^3 - 4x$ for values of x from -2 to 3



(2)

- (c) Write down the coordinates of the three points where the graph of $y = x^3 - 4x$ crosses the x -axis.

.....
(2)

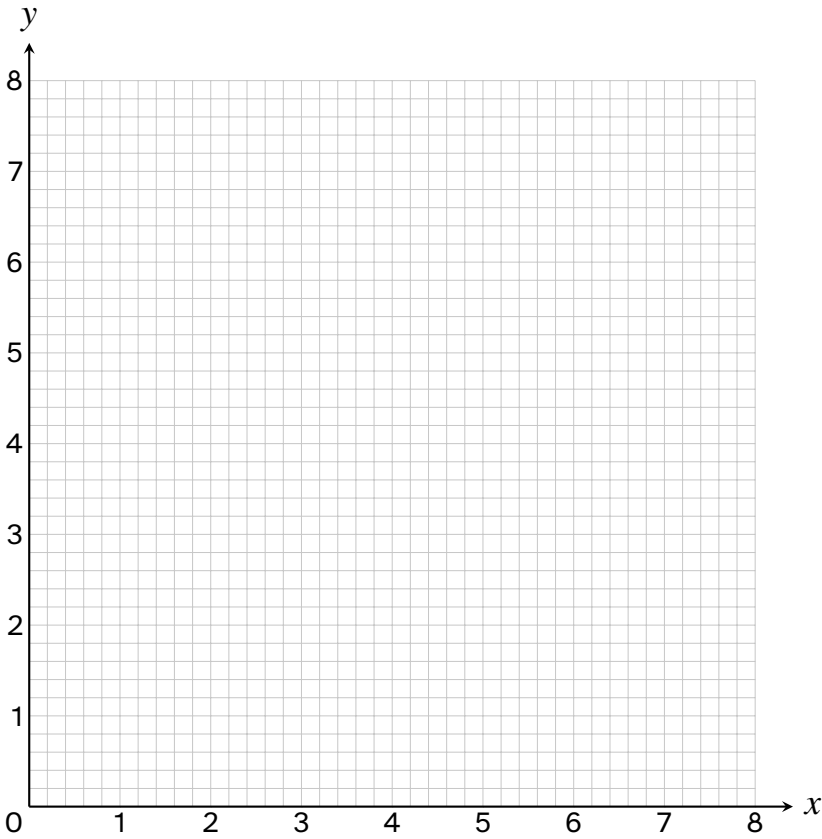
(Total for Question 2 is 6 marks)

3 (a) Complete the table of values for $y = \frac{8}{x}$

x	1	2	4	5	8
y		4		1.6	

(2)

(b) On the grid, draw the graph of $y = \frac{8}{x}$ for values of x from 1 to 8



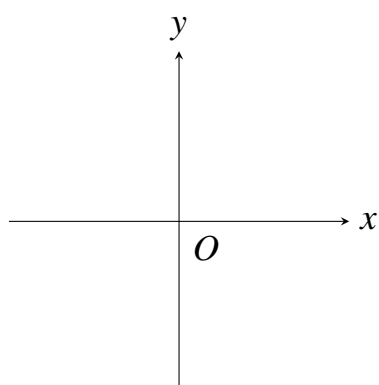
(2)

(c) Use your graph to find an estimate for the value of x when $y = 3$

$x = \dots\dots\dots$
(1)

(Total for Question 3 is 5 marks)

4 Sketch the graph of $y = \frac{1}{x}$



(2)

(Total for Question 4 is 2 marks)

- 5 Sam rides his bike for 24 km.
 The time, t hours, that the ride takes is given by $t = \frac{24}{s}$
 where s is Sam's average speed in km/h.
 The graph of this formula is drawn on the grid.



- (a) Work out the value of t when $s = 16$

$t = \dots\dots\dots$
 (1)

- (b) Use the graph to find an estimate for Sam's average speed when the ride takes 2 hours 30 minutes.

$\dots\dots\dots$ km/h
 (2)

- (c) Sam says, "If I ride twice as fast, the ride will take half the time."
 Is Sam correct? You must show how you get your answer.

.....

 (2)

(Total for Question 5 is 5 marks)